

# Asteroids, Moore's Law, and the Star Alliance

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Good afternoon. It's a real pleasure to be here today. I've chosen as my title--derivative from a favorite book title by my favorite mystery writer, Kinky Friedman, *Elvis Presley, Jesus Christ and Coca-Cola*--"Asteroids, Moore's Law, and the Star Alliance," which I hope is somewhat intriguing.

I want to set some boundaries for my talk today. I do come, perhaps, with a less broad view than Deanna Marcum or Cliff Lynch. I come from a very large, relatively well-funded library, which supports a vast array of programs. Many are traditional, but many programs and users are definitely "post-modern." We're private--we're not part of a state-funded system. And financially, in terms of budget planning, this is immensely helpful to us, though in terms of building and crafting the kind of alliances we need with other libraries, being a stand-alone private university can limit us in various ways. My talk is also a very personal one. I am an associate director for collections development, and my responsibilities relate to the getting and keeping of collections. So, in that sense, what I am going to talk about is both narrower and wider than the digital library topic. And, Karen, I apologize that a lot of what I am going to talk about is the "now" and near term--with perhaps at the end some longer-term speculation.

So let me ask you now, how many of you flew to Philadelphia to get to this meeting? [Majority of hands were raised.] This is very good. We recognize that many of you fly frequently, so please take the next few moments with us to reinforce what you already know. Let me begin by showing a cartoon from my favorite science and technology cartoonist, Sidney Harris in the *New Yorker* magazine. The caption of this cartoon is that we have lots of information technology, but we don't have any information. I must submit that, much as I adore Sidney Harris's cartoons, in this respect, he is absolutely and totally wrong. We have huge amounts of information, and therein lies part of our digital library challenge.

### **The eternal verities**

Let us begin by reviewing a number of assumptions that collections librarians have brought to the digital environment.

First: Content is selectable and librarians are the best-positioned people in the world--that is, the best-positioned profession--to choose what readers need.

Second: Librarians also believe or have believed that content is collectible. It can be brought into library spaces and, over time, readers will find it in a leisurely, contemplative way.

Third: There has been reason to believe that content is relatively scarce and so society has appointed librarians as the professionals, and libraries as the organizations, that will buy and retain what society needs over the long term.

Fourth: We know that content size grows incrementally. It grows a little bit larger each year in any given academic library. And so, of course, we have to make provision for the facilities to take care of that kind of growth.

Fifth: Materials that are accessioned belong to the library and will exist for a very long time. And what that really means is that collecting is almost equivalent to long-term preservation, which, of course, in a print environment is largely the case.

Sixth: The good library last forever or almost—it intends to be around for a very long time. Its collections are meant to endure nearly "forever."

Seventh: The good library is absolutely at the head of the line to meet its readers' information needs. That is, it is at the top of the information food chain. It is the most desirable, authoritative, informative source. Others sources may be easier and more instantaneous (such as online search engines), but, gosh, our libraries are the best sources of all.

Eighth: We also know that there are great numbers of great libraries around the world. So, even if one of them falls off of the information food chain in some way, the others will be always be there for us.

Why have I troubled to say these things? Because many of us in this room do not entirely believe these golden rules. And an increasing number of us believe them far less than ever we did. Nonetheless, in many ways we continue to act as though these rules still apply and will apply for a long time to come. Deanna Marcum spoke of user behavior and eagerness to use digital resources rather than, necessarily, to visit a traditional library. To her words, I would simply add that user behavior does not just involve what information seekers do with information. User behavior, to some extent, is reflected in the resources that our funders and legislators are willing to allocate to support traditional libraries. There is evidence that they may be less willing to do so than they were in the past—and I think both of those groups have a message for us librarians.

## **Asteroids<sup>1</sup>**

Now let us talk about some immense changes or surprises that are headed toward of all of us in this room. Here we can use the analogy of asteroids, which have some very interesting characteristics, mostly related to the unexpected. For example, you never know where the next asteroid is coming from; just when you spot one and you think it has passed you by, another one pops up somewhere and is headed your way; and some asteroids are going to hit you, no matter what you do. Just as we previously enumerated some of the golden rules of library collecting, so it is worth our time to dwell on some of librarianship's asteroids.

### **Many media**

The first asteroid that particularly came to mind during preparation for this session is the rapidly increasing amount of content in proliferating and diverse formats in media, with electronic being, of course, the most recent, the most pervasive, the most powerful and the most tantalizing; and a growing mandate for libraries of all sorts to collect across all of these media. Let us dwell on these media for a couple of minutes, because the topic is fascinating.

Sometime after World War II, initially with public libraries leading the way, librarians began to take it for granted that their content missions included all kinds of media that had not previously existed and had not been hitherto collected. So, around that time, collections of musical and oral recordings, and then of film and videotape, began to be produced and collected. In many cases, these media were not fully integrated into mainstream library collections, although to some extent they began to appear in library catalogs. In fact, these media collections are often housed separately, controlled differently, and operated, I believe, on a far less ambitious scale than how libraries handle printed matter.

Now, the reason that I say that public libraries led the way in adding media collections is that much of the material in public libraries is intended to have a very purposeful and possibly limited life. And so it makes sense for public libraries to make available bins of paperbacks or CDs or shelves of videotapes. When the media wear out, this is evidence is that their purpose has been served. Now, we in research libraries always believed we had to be fussier because we were, somehow, committed to preserving each item (or most of them) in perpetuity. And so we felt obligated to control use and access most carefully.

To the best of my knowledge, most of the big research libraries backed into the world of media. And at Yale, we are still more or less backing into film and DVD and all of these newer formats. Now the electronic camel has stuck his great big fat nose under our tent. So here we are: libraries assuming, almost by accident, the responsibility for collecting, housing, servicing, and preserving *all* media.

## **Internationalization**

Another very large asteroid shoots out of world globalization and the internationalization of universities. Libraries like mine face a growing mandate to collect internationally as never before. Most of our university presidents have traveled the world proclaiming, "Mine is an international institution. We serve a global clientele; we recruit and support students from around the world; we attract the best faculty from everywhere." I know this places immense pressure on many, many academic libraries to serve individuals, scholarship, language groups, and resources as diverse as never before. This is a very tall order.

## **Digitizing traditional library materials**

Many publishers, libraries, and projects have been rapidly digitizing substantial amounts of content in traditional formats such as books, journals, special collections, images, and much more. Already, a large critical mass of digital materials exists (in addition to current materials, which are being created digitally, from the outset). Great digital collections already exist, although I would submit that apart from the best-publicized ones, we don't know what many of these are, where they are or very much about them. These are many pearls inside many oysters, as it were.

## **New types of publishing**

We are also seeing the creation of wildly heterogeneous dynamic electronic content, a topic that Cliff Lynch may address in the next talk. And in such cases, we really don't know where this content is, how much of it there is, what it is, or what it looks and feels like. And, of course, librarians keep learning that their readers expect increasing amounts of information delivery from outside the boundaries of anything we imagined to be in our traditional libraries.

## **The asteroid that landed**

Let us contemplate just a few examples of new types of digital information content that libraries may not yet think to "collect" but that nonetheless (I submit) we may wish later that we had somehow pursued. By the way, here I have stolen a phrase from the Library of Congress, not to pick on this wonderful institution, but because its mission statement resonates with a number of individuals like me, who work in research libraries. The Library of Congress's mission is worded thus: "To build a universal collection of knowledge and creativity." All of us librarians think that in some way our own libraries are contributing to exactly this type of mission—I find it these days to be an impossibly tall order, not just for LC but for LC and all of us.

My first screen shot is a cartoon map of the Clinton, CT, Outlet Mall, which is on Exit 63 off of I-95 in Connecticut. This is a map both of how to get to the Clinton Outlet Mall and of the shops you'll find inside. These maps, as those of us who are outlet junkie bargain-hunters know with assurance, are ones any shopper can pick up in any outlet mall. Often the maps are printed in bright colors. And always, at the bottom, there is a lovely phrase that reads, "A copy of this map has been deposited with the Library of Congress." Well, I'm not even going to ask anyone at the Library of Congress, let alone at my Library, what they do with these maps.

Voice from the audience: "You don't want to know!"

Thank you for that comment, because it helps to make my point—and, by the way, these maps are all now available on-line, so you don't even have to get a handout and throw it in the dust bin as you're going back to your car. Which illustrates another concern, but more of that later.

In any case, I looked at a number of these mall maps online and asked myself, "Is there value in these items? For whom? Can we imagine an interest from students of retailing or business history or shopping habits or popular contemporary pastimes, students who would use this material if it was known to exist somewhere?" In fact, mall maps are not uninteresting materials, but I don't know that information seekers will ever be able systematically to find them in the future. While I'm not arguing here that this type of material should be at the top of the digital collecting priorities, it's an example of an interesting kind of genre that one encounters without taking any thought for it.

Here's another screen shot—you all probably know this resource well—from the service called "Arts & Letters Daily," now managed by the *Chronicle of Higher Education*. If you don't know it, you probably want to become acquainted with it. It is a Web publication by some folks in a basement (or at least a metaphoric basement!) in Australia. It is of very high quality; it singles out, identifies, and links to cultural and literary news, notes, events, and so on.

Setting aside my high regard for "Arts & Letters Daily," I want to knit that to another Internet format, which is the Web log—the "blog." Everyone here probably knows what a "blog" is—it is a kind of on-line diary that somebody has chosen not only to write, but make public to the whole world.

I believe that if I were to speak with a lot of my counterparts in collections development positions and say, "Shouldn't we be collecting blogs?" they would rightly reply, "Not on your life!" Most of these diaries may be of low value to posterity. But here I am confounded with a difficulty, which is that "Arts & Letters Daily," a source that I regard very highly, has chosen to keep a running list of interesting Web logs and links. What is my library to do about that? What is LC to do about that? I feel, suddenly, that I may be missing some potentially important items. I suspect other librarians feel the same way, even as I am pretty sure that none of us is doing much of anything about collecting high-quality blogs (though we may be writing them ourselves!).

## **Moore's Law and Stille's Corollary**

We could review many more examples of new types of electronic publications that do not appear in print, but let us move from getting collections to their long-term retention, which topic involves a brief mention of Moore's Law and what I will call "Stille's Corollary". You all know what Moore's Law is: that the speed of personal computers will double every 18 months. And whether that is exactly the right multiplier or a little too high or too low doesn't precisely matter. What the personal computer has done is to unleash large amounts of talent and creativity—and really poor talent and really low creativity—upon the world so that more information production and scholarly communication are happening than ever before.

Now to "Stille's Corollary" (although this is not Stille's term, but mine). Alexander Stille is a journalist who writes about contemporary culture, cultural history, and about information past, present, and future. Many of his pieces were written for *The New Yorker*, and I commend to you a collection of his essays called *The Future of the Past*, published as a book late last year by Farrar, Strauss. Early in the introduction, he writes, "The constant improvements and changes in the computer industry mean that we are producing more and more information every day, but also that we are bound to lose more information now than at any time in the past."

I was delighted to see that, later in the book, in Stille's chapter on information, he quotes my colleague, Paul Conway, formerly director of preservation at Yale and now an associate director at Duke Library. Conway, writing in a 1996 monograph about preservation matters for the Council on Library and Information Resources,<sup>2</sup> produces a most instructive chart called "The Irony of Modern Media." The point of Conway's chart is that the newer the media, the shorter their life span. But now, something more confounding has happened, which is that even the most desirable information has crossed into new media. Really desirable, important content is now being created in digital media, with a minimally assured life span. It is a fact that, even if we wish to take action to preserve electronic material—which we don't well know how to do—preservation is costly and property rights are complicated. Should we wish to proceed not only to preserve the content, but also the value-adding presentations, enhancements and interfaces, the task becomes truly daunting. The good news is that a number of organizations are talking about and working on solutions, to which there are as yet no clear paths. Eventually we will have a menu of e-preservation choices, and the sophistication of those choices will be tied to a price spectrum of some sort.

## **From asteroids to new opportunities**

We have talked about issues, our asteroids, regarding the getting and the keeping of new information media. What are some of our opportunities? For those of us in the collections business, some interesting new modes of collection development deserve our time and attention. I list just a few possibilities here.

### **Up-front, comprehensive capture of Web sites**

A comprehensive approach to building digital content is exemplified by the National Library of Sweden. Four or five years ago, the Swedish National Library staff decided that the Library should systematically capture the content of the World Wide Web, as it relates to Sweden—that is, works published in Sweden, in Swedish, about Sweden in other places. This project has been active for several years now. At this time, it is probably difficult to access specific items in that collection or do much at all with the content, but I so admire the effort because of the leadership that this library has exercised, not only in the capture of the Web but also in seeking amendments to Swedish copyright law to enable clear and explicit permission to gather the country's Web heritage.

### **Synthetic Web guides**

Last fall, Michael Keller, Stanford's University Librarian, made a proposal to the library directors of the "Ivy Plus" group. His "synthetic Web guides" idea was received with much interest, and the group may proceed with a pilot project. The idea is that instead of each of our libraries, whether it be Stanford or MIT or Columbia or Penn or Yale, developing Web sites for our users in a given field, we would pool those forces and, together, we would develop a far higher quality, ongoing effort. We would do such work not only together, but we would also team up with appropriate scholarly societies and organizations, to develop comprehensive guides to fields of study and scholarship, and to link them to

live resources, in effect building mini-digital libraries. This is exactly the kind of activity that librarians need cooperatively to pursue; we are repeating efforts far too often and the results are not necessarily of the highest quality.

## **Repositories**

"Institutional repositories" are a hot topic these days. At least several academic institutions are talking about establishing or have begun to establish repositories of electronic content (articles, books, databases, courseware, and the like) created on their campuses, whether in narrow subjects bands or comprehensive ones. Once a number of such repositories exist, accompanied by quality tools for extracting, aggregating, enhancing information from them (and other openly accessible Internet resources), a reader, in his or her own institution, could cross-search and create a kind of personal library on the desktop. Such a resource would be focused on the particular reader's needs, a kind of after-the-fact "collection" in the reader's own space. Libraries ought to facilitate exactly that kind of "collection," developed by individuals, as a public service.

## **More opportunities for cooperation**

### **Sharing collections**

It seems logical that in the world of digital collections many aspects of libraries' content activities can or should be done only a few times really well, instead of being done over and over again. When I first joined the staff at Yale, I was told that sometime around 1980 or 1970--the data are presumably captured somewhere in the Library's archives--Yale collected as much as five percent of the world's publication output. Now, I don't know how accurate that number was, though it is surely a fact that someone attempted to make the measurement. Today, there would probably be a decimal point and a couple more zeros in front of that 5%, given the rapid increase in traditional publication and the exponential growth of digital content.

Yet, many library collections efforts are still under-exploiting possibilities for cooperation. Where are some alternative examples from which we can learn? Worth our attention are the so-called "triangle" libraries in North Carolina, that is, the University of North Carolina (Chapel Hill), North Carolina State University, and Duke University, which have an enviable history of collaborating on traditional collections development back to the 1930s and are building on that tradition digitally as well. And while one might have a difficult time arguing that such cooperation has helped them to save money, it has helped them to create a large, rich collection with far less overlap than is the case in most other library regions.

In our own northeast region, the Ivy libraries are participating in an enhanced Interlibrary Loan project called "Borrow Direct." Borrow Direct utilizes a software with so far about five years of invested development, which allows the readers at each of our institutions to borrow books from the other libraries as if the users were sharing one library. Now, there are all kinds of riders and exceptions to this evolving service, but even with limitations (it does not handle journal articles at this time) it is a great cooperative success. And our Cornell colleague Ross Atkinson (Associate University Librarian for Collections) is convening a group of Ivy collections librarians to imagine how we on the content side may work more effectively to optimize the resources available regionally, given our new sharing opportunities. The content in this example is "traditional" but the tools for locating and sharing it are digital.

## **Preservation**

Preservation efforts, particularly for digital content, will need to be allocated and shared and recorded if we are to succeed with this enormous task. Digital preservation is an immensely complicated topic and needs to be left to other forums, as there is no time to probe it today.

## **Better structures for ever increasing library cooperation**

The needs and opportunities before us call for cooperative projects and structures we librarians are only beginning to imagine. We are terrific at convening meetings, outlining problems, developing agendas and saying, "Here's what needs to be done." We should not minimize the importance of that strength. But the next steps require us to move ahead and actually do "it." And this is where we librarians have a harder time.

"What are some options," I ask myself, "for expanding cooperation?" Here are several:

1. **Acquisitions and mergers:** In the commercial sector and corporate sector, these business tactics work very well. They can bring benefits of synergy and aggregation. But mergers and acquisitions do not happen in colleges or universities and libraries. I mean, none of our libraries absorb others nor do they absorb us. A takeover bid might be interesting but unlikely.
2. **Lots of joint projects:** We can continue, and we will, to do many diverse projects together, especially digitally. We have a lot of opportunities and a certain amount of experience here. In fact, we have far more ideas than we have opportunities, because ideas are rarely in short supply. While joint projects are a good thing, they can also fragment our energies and stretch our resources. At Yale, I have been part of grant proposals, and I've observed that at least I have a tendency to underestimate the costs of a given digital project, either initially or over the long term. Doing projects has its drawbacks and its limitations, beyond a point.
3. **Public/private relationships:** This is an area that could become much more promising than it currently is. The private sector may be able to bring to a project the some business skills and capital while libraries could bring a strong knowledge of users and services. Let me name one particularly exemplary public/private project, which is HINARI, developed jointly between the World Health Organization Library and a number of biomedical publishers to deliver journal articles—current, contemporary, high-quality—to developing nations, nations that could not otherwise afford access to information. This is both important and exciting. The project's creators "think big," in ways libraries alone cannot.
4. **Consortial activities:** Consortia, of course, offer numerous ways for expanding library cooperation and many are active today. The electronic environment has given impetus to numerous activities such as digitizing collections, jointly licensing publishers' content, facilitating resource sharing, and much more.

## **Star Alliance!**

Now, let me show the key image for this talk. It is the Star Alliance. Most of us know that the Star Alliance is a global business alliance of the airlines United, Lufthansa, Swiss Air, Mexicana, New Zealand Airways, Thai Airlines, and more. As I downloaded this picture from the Web (of course) and into this slide, I asked, "What rules of the Star Alliance can libraries learn from?"

First: The Alliance is global in coverage—that is its intention. It aims to cover the world, while being non-duplicative in routes, wherever possible. You know, it is natural for Thai Airlines to be in alliance

with Lufthansa, rather than with Singapore Airlines, right? The Alliance extends the reach of every airline that is a participant.

Second: The value to the customers of the Alliance is very high. Mileage is portable, scheduling is more flexible. The customer can fare airlines together for price advantages. The value to the participating companies is also high, for all of the above reasons.

Third: Caveat. We know, of course, that such alliances are not a financial solution. We all know the current economic situation, not just for libraries but for the U.S. And we all know that both U.S. Airways and United Airlines are in "Chapter 11," with other major airlines not far behind. In fact, it is not clear what's going to happen to the airline industry and what impact that will have on Star Alliance.

## **Translating the Alliance**

Without getting too silly about the metaphor, let us say that those Star Alliance passengers could be our library users. Passengers are key because without them, the organizations simply would not exist; there would be no planes, no alliances, there would no Boeing, there would be nothing. And perhaps the planes are our libraries: they might be prop jets, they might be air busses, the very biggest ones might be 747s. They serve their user communities. And the airlines might, perhaps, be our consortia working across libraries, probably regionally. Finally, the Alliance is an aggregation of all of those efforts into partnerships that are pointed at solving global problems.

The complexity here is that we each need to understand where in this metaphor our library's efforts are best placed. Are we a prop jet? Are we a 747? Are we different components of the metaphor at different times? Think about it.

## **Star alliance to Star Trek**

Quickly, we need to move beyond Star Alliance to—I'm going to say—Star Trek, that is, alliances more broadly conceived than today's consortia and probably more successful at undertaking the largest challenges facing us in the digital library environment. Today's consortia are doing wonderful work. They have, in many cases, long histories, though NERL, the consortium with which I am connected, was created comparatively recently, during the mid-1990s boom of digital resources licensing. In our library consortia, we are all, appropriately, task- and region-oriented. We have built these consortia for administrative convenience and utility, whether they do electronic licensing or create physical repositories or manage cross-library acquisitions or facilitate sharing of materials. But, in order to solve our largest challenges, to build enduring collections of digital libraries and services, we need to do even better than that.

In short, building productive alliances has got to become libraries' new core competency. And, we all know that we're not bad at partnerships and alliances, but we're not quite good enough at them, yet.

What could happen to our collaborative efforts in the future? What must happen if we are to thrive in the digital arena, for the benefit of today's users and users for generations to come? In a highly speculative mode, I think of the European Union (EU). The EU came into being as the common market after World War II to promote prosperity in Europe, to make goods widely available. It began its efforts by reducing tariffs and then moved towards integration of economic and financial policy. For example, most members of the EU now share a common currency, as well as common environmental regulations. Can we imagine any equivalent basis for library cooperation? There are some early examples of this kind of thinking, for instance, in the California Digital Library.

Some pressing questions are: Just how much governance does such an emerging new center require? What is its role in its community? Does it become dominant? Does it become one of equals? Does it become a servant of the organization? And when does this happen? What is the tipping point? What would it take for us, say, to build the equivalent of TEL, The European library, a planned and reasonably well funded project that European countries are exploring? That is the sort of dream we must begin to dream in order to realize our digital ambitions, that is, to build substantial subject guides, tools, and vast digital collections; to solve the considerable challenges of digital preservation; and to engage readers everywhere more fully with information.

## Obstacles to ambition

What gets in the way of dreaming and fulfilling bigger dreams? Unrealistic, unrealizable local ambitions, organizational drag, unsustainable pricing models for formally published information (such as STM journals), competition among libraries, emerging disciplines and the complexities of interdisciplinary studies and how to approach these, and lack of innovation space. For example, wouldn't it be terrific to have the funds to hire a "Librarian for Weird and Alien Information" and set her at the emerging digital world, to suggest how we might think about it in our institutions. Librarians have some dreaming time and space, but it not much—libraries' budgets are not funded for contemplation or risk. At the end of the day, although all of us have worked hard at strategic planning, we are mostly tied to the services we have been trying to provide for the kind of users we've served all along.

So, having stated these thoughts about librarians and digital libraries, I am happy to announce that the airplane has now pulled into its gate. It has been great having you as passengers. We hope that you have a productive time, wherever your travels take you, and that you will live long and prosper [picture of Dr. Spock from Star Trek]. May we all go boldly together where no libraries have gone before. Thank you very much.

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<sup>1</sup> For this metaphor, thank you to the content industry analysts Outsell, Inc., for using this image in a recent, very cogent report about the shape of things to come for the content producing community.

<sup>2</sup> Paul Conway. *Preservation in the Digital World*. (New York: CLIR Publication 62, March 1996). <http://www.clir.org/pubs/reports/conway2/index.html>